LABSTAC

OPERATION MANUAL

Microcentrifuge

CEN41-500

SHA71-1600

PREFACE

Thanks for choosing Microcentrifuge. This operation manual describes function of the instrument. To ensure that you could operate instrument in correct way, please read the manual carefully before first using it. Please keep this manual properly for later use if you meet any difficulty.

OPENING CHECK

At the first time of opening the packing, please check the instrument and appendix with the packing list. If anything does not match with the packing list, please contact with the vendor or the producer.

Performance Test Statement

Name	Micro -centrifuge	Type	CEN41-500
Test Date		Production No.	

No.	Test Content	Standard	Test Results
1	Speed	100-15000rpm	□ Qualified
2	Basic Function	Valid	□ Qualified
3	Appearance Demand	Valid	□ Qualified
4	Appearance Sign	Valid	□ Qualified
5	Continuous Experiment	5 hours trouble-free	□ Qualified

Test Result	
Remarks:	
Tester:	Confirmer:

Packing List

No.	Name	Type	Qty	Remarks
1	High-speed Centrifuge	CEN41-500	1	
2	Powerline	4A	1	
3	Operation Manual		1	
4	Certification		1	

Charger: (Sign/Stamp)	Packing Date:

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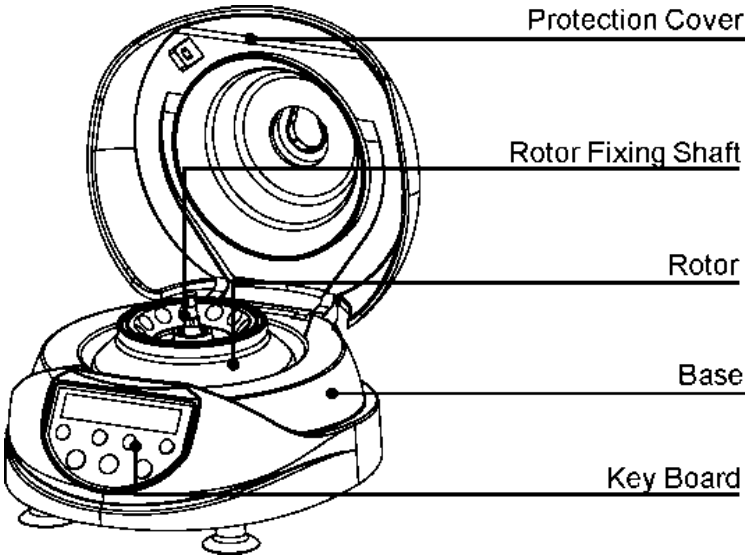
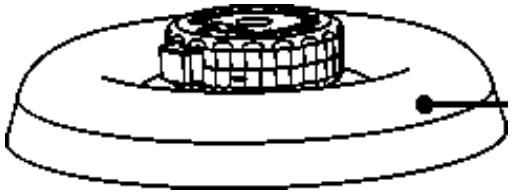
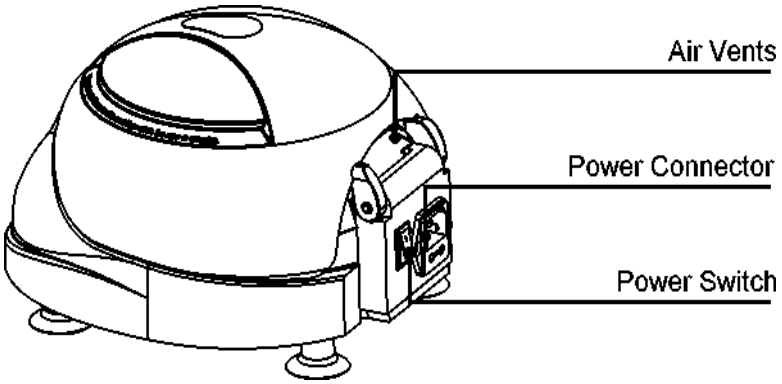
01. Introduction

The Microcentrifuge CEN41-500 is suit for 1.5ml/2.0ml centrifugal tubes. It is widely used in laboratory experiments of bioscience, medical science, chemical.
Please read this operation manual carefully before using the instrument.

1.1 Structure



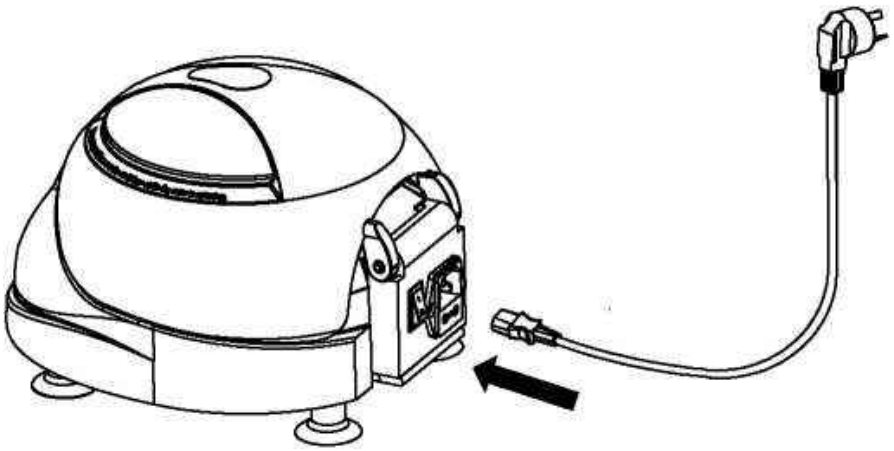




1.2 Installation

1.2.1 Put the instrument on a horizontal and even working table. Make the suction feet hold the table.

1.2.2 Connect power as below figure. DC socket is on the rear of the instrument. Voltage should be AC110V or 220V.



1.2.3 Check air vents on the rear of the instrument. Make sure it is not covered.

1.2.4 Make sure there is no harm materials (or potential harm materials) in 30mm around the instrument.

1.2.5 Power on and open the cover, put the rotor in the motor shaft. Use the rotor fixing knob to fix the rotor tightly. If the rotor already put on the motor shaft, checked and make sure it is fixed tightly.

IMPORTANT!

Make sure the rotor is fixed tightly before operation whenever you need to use the instrument.

02. Parameters

Type	CEN41-500
Voltage	110V/220V 50-60HZ
Power	105W
Max. Speed	15000rpm
Max. RCF	15000rcf
rpm/rcf Unit Exchange	YES
Timing Range	20sec~99min
Rotor Capacity	12x1.5/2.0ml tubes
Max. Sample Density	1.2g/ml
Acceleration to Top Speed	15 seconds
Deceleration to Stop	15 seconds
Operation Environment Temp.	5° C -35° C
Dimension WxDxH,	260mmX260mmX150mm
Net Weight (including rotor)	5.1 kgs

03. Safety Warnings

Make sure rotor in good condition and correctly and tightly fixed before operation every time. If any irregular noise when operating, please press “Start/Stop” key to stop operating. It may caused because rotor or rotor safety cover not fixed tightly.

Forbidden using rotor with crack or damage.

Forbidden moving the instrument when it is in operation.

3.1 Sample and Tube Placement

3.1.1 Density of sample in the tube should no more than 1,2g/ml.
3.1.2 Check the condition of the centrifugal tubes before place them into the rotor. Do not use tube with crack or damage.
3.1.3 Make sure the tube lid is well closed before putting it into the rotor.
3.1.4 Place the centrifugal tubes balanced.

3.2 Rotor Cleaning and Maintenance

3.1.1 Any slight crack or damage will lead potential safety hazard. Properly use the rotor and take care of it.
3.1.2 Do not use corrosive to the rotor.
3.1.3 If fluid spilled out during operating, put out the rotor and clean it with non-corrosive cleansing fluid (PH=7 ±1) immediately.

04. Operation Guide

4.1 Operation Key

START/STOP--------Start or stop operation
SHORT-SPIN--------Short operation key. Keep press to spin
LID OPEN----------Unlock the cover
+/----------set time or speed value. Keep press +/- to adjust value fast.

4.2 Rotor Installation and Uninstallation

Fix the rotor to the motor shaft. Hold the rotor, use the Knob for Rotor Fixing which is on the base plate (refer to Figure A below) to the Rotor Fixing Shaft (refer to Figure B below) to clockwise rotate the rotor tightly to fix rotor. No any loosen or relative slip between rotor and the Rotor Fixing Shaft when the rotor fixed correctly. After rotor well fixed, put the Knob for Rotor Fixing to the base plate again.
Hold the rotor, anticlockwise rotate the Knob for Rotor Fixing to the Rotor Fixing Shaft to uninstall the rotor.

Knob for Rotor Fixing

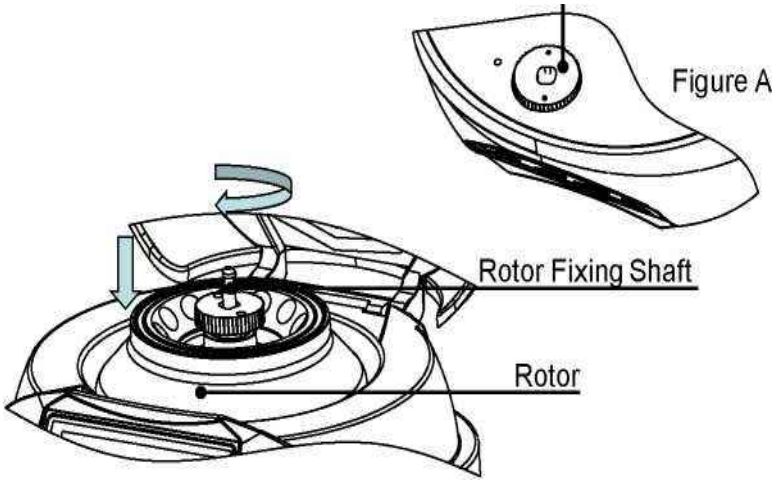


Figure B

IMPORTANT!! Make sure rotor in good condition, correctly and tightly fixed before operation every time.

4.3 Sample Loading

The tubes must balanced placed into the rotor. It also requests sample in the tubes basically the same (including volume and density). Balance sample makes the operation less wearing the motor shaft and reduce operation noise.

4.4 Setting Time and Speed

4.4.1 Power on, press “Lid Open” key to open the cover. Check the rotor is in good condition and correctly tightly fixed.
4.4.2 Press + or - of Time key to set timing value. Time range is 20 seconds to 99 minutes. Press + or - of Speed key to set speed. Max. speed is 15000rpm.
4.4.3 Balanced place centrifugal tubes in the rotor, close the rotor safety cover and protection cover. Press “Start/Stop” key to start operating. Press it again to stop operating.
When achieves setting speed, it begins keeping time and display remnant time. After time ends, the centrifuge stop operating and unlock the cover automatically.

4.5 Short Operation

4.5.1 Power on, press “Lid Open” key to open the cover. Check the rotor is in good condition and correctly tightly fixed.
4.5.2 Balanced place centrifugal tubes in the rotor, close the rotor safety cover and protection cover.
4.5.3 Keep press “Short-Spin” key, it spins at the max. speed (15000rpm), release “Short-Spin”, operation stop accordingly.

4.6 Speed / Force Display

Press + and - of speed key simultaneously, speed unit changed between rpm and ref.

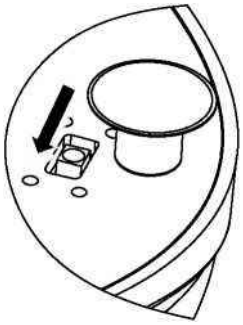
Transfer formula between rpm and ref please refer to below.

$$Rcf=1.118X10^{-5}Xn^{2}\ Xr_{max}$$

P.S.: n is for speed (unit: rpm), rmax=6crn

4.7 Open Cover without Power

The cover cannot directly open without power. If there is request open cover without power, please disconnect the power line, turn over instrument, find the gap on the base plate, push the lock bar in the gap to unlock the centrifuge.



05. Maintenance

Regularly clean the outer shell and the rotor (including holes) separately with diluent alcohol after power line disconnected. Do not dip the instrument into fluid or water it.

After cleaning finish, check the rotor condition - whether there is any crack or damage. Make sure the rotor is in good condition then fix the rotor correctly and tightly to the motor shaft with the knob for rotor fixing.

06. Failure Analysis and Trouble Shooting

Phenomenon	Possible Causes	Processing Procedure
no operation when power on	Power line problem	Check the power line
	No power	Check the power
cannot open the lid	Power off	Power on
	Rotor is spinning	Stop device operation
	Lid Key broken	Contact the seller
Instrument shaking during operation	Rotor not fixed correctly	Fix the rotor correctly and tightly
	Tubes are not balanced	Place the tubes in balanced holes
Display Er=01	Unlock circuit broken	Contact the seller
Display Er=02	Lock circuit broken	Contact the seller
Display Er=03	Motor control circuit broken	Contact the seller

07. Warranty

Warranty Description

Within one month of delivery, the company is responsible of exchange for breakdown caused by material or manufacture.
Within 12 months of delivery, the company is responsible of free repair for breakdown caused by material or manufacture. Proven with defect under warranty, company will exchange the instrument or free repair it alternatively.
Instrument under warranty period should be delivered to the appointed maintenance department by user. Freight from user to maintenance department will be borne by user.
Freight for instrument resent to user will be borne by the company.
Repair out of warranty will be charged reasonable cost.

Warranty Coverage

Breakdown due to improperuse, operation in inappropriate conditions, maintain or refitting without authorization are not in warranty coverage.

Repair Record

Product Description	Microcentrifuge
Type #	CEN41-500
Product Series #	
Purchasing Date	

Buyer Company	
Buyer Name	
Address	
Telephone	
Fax	
Zip Code	
E-mail	

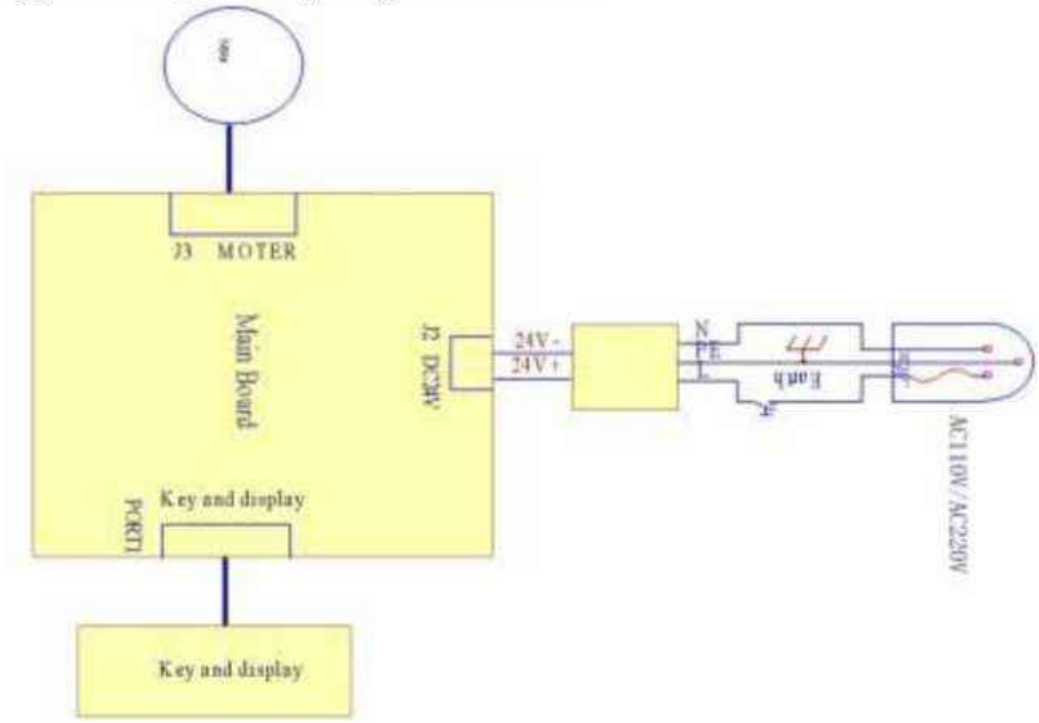
Date	Repair Record	Repaired by

08. Packing List

Name	Type	Quantity	Remarks
Main Instrument	CEN41-500	1	
Metal Rotor		1	
Rotor Safety Cover		1	
Knob for rotor fixing		1	
Power Line		1	
Operation Manual		1	

Appendix A : Wiring Diagram of CEN41-500

Appendix A: Wiring Diagram of MC-15



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Email: contact@labstac.com
Website: www.labstac.com